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A NEW SPECIES OF *XIPHYDRIA* LATREILLE (HYMENOPTERA: XIPHYDRIIDAE) REARED FROM RIVER BIRCH, *BETULA NIGRA* L., IN NORTH AMERICA

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Abstract.—***Xiphydria decem*, n. sp.**, is described and separated from other North American species. It was reared from branches of river birch, *Betula nigra,* L. (Betulaceae) in Illinois.

Key Words: Symphyta, woodborer, woodwasp, hardwood, birch, Illinois

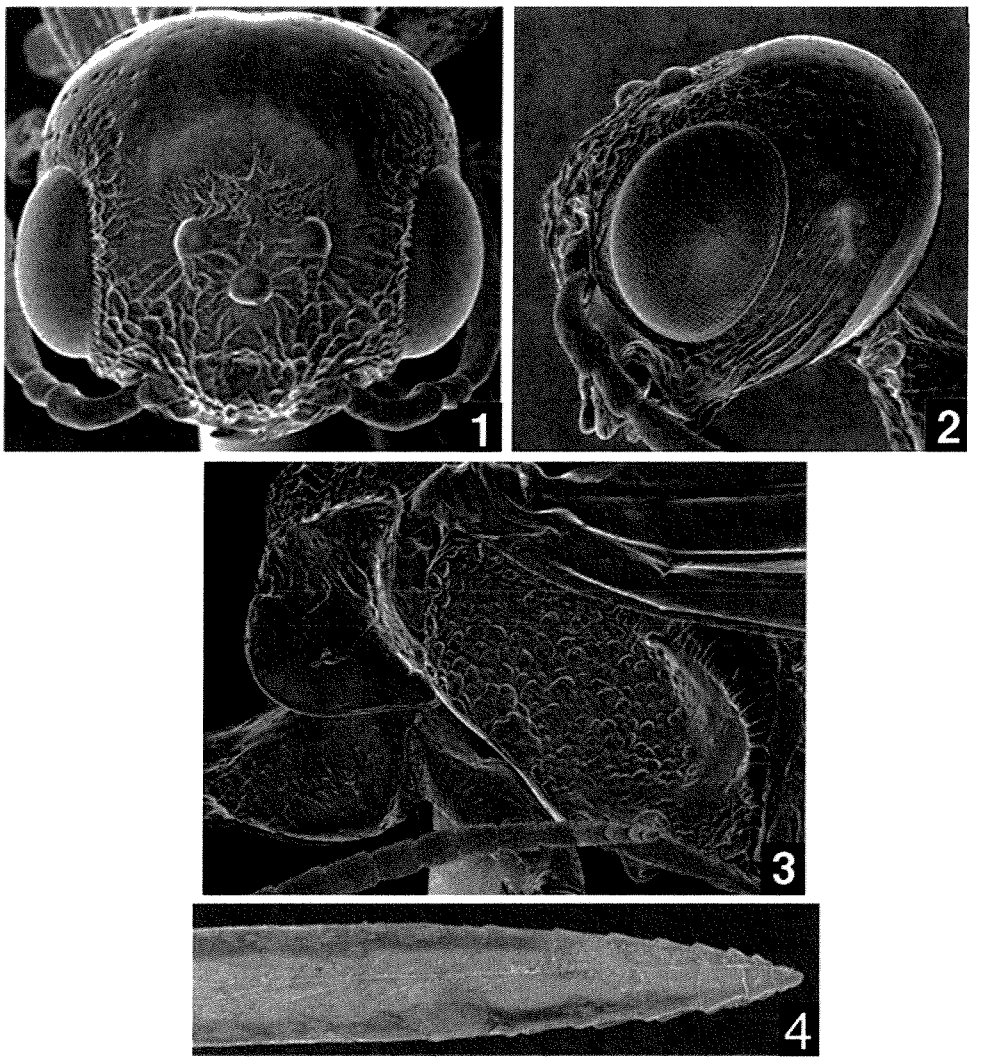
Larvae of *Xiphydria* Latreille bore and feed in the wood of small, dying or weakened tree branches. Most specimens are obtained by rearing, although adults sometimes show up in Malaise trap collections. Some species are relatively host specific; consequently, discovering an undescribed species in a host plant for which the woodboring fauna has not been studied can be expected. NMS reared several specimens of an unusual *Xiphydria* from river birch, *Betula nigra* L., in southern Illinois. Although only three specimens have been reared, both sexes differ morphologically from all previously described species, and the species of host plant has not been recorded previously for *Xiphydria.* Here we describe and name this species in support of ongoing research by NMS on wood-boring Hymenoptera and their associated fungi.

Xiphydria decem Smith and Schiff, new species

(Figs. 1–4)

Female.—Length, 9.0 mm. Head black with narrow apex of mandible; small oval spot posterior to each lateral ocellus; and broad stripe from lower gena near malar area extending on gena, but not adjacent to eye, to top of head behind eye white. Thorax black with only narrow white spot on posterior corner of pronotal angles. Legs black with extreme base of foretibia, basal third of mid- and hindtibiae, and basal half of outer surface of mid- and hindbasitarsus white. Abdomen orange with basal plates, sheath, and cercus black, and with infuscate spot on apical sternite. Wings lightly, uniformly blackish; veins and stigma black.

Antenna 14-segmented. Reticulate sculpturation on head extending posterior to ocelli by about same distance as breadth of an ocellus; few ridges lateral to ocelli; reticulate sculpture on frons above antennae and between eyes (Fig. 1). Head in lateral view with 4–5 major striae on genae, few widely separated large punctures behind eyes; anteriorly protuberant; malar space (distance from eye to malar depression) less than width of first antennal segment (Fig. 2). Thorax with pronotum lacking sculpture on lower lateral half; punctures of mesepis-



Figs. 1–4. *Xiphydria decem.* 1, Head, dorsoanterior view. 2, Head, lateral view. 3, Thorax, lateral view. 4, Apex of lance and lancet.

ternum relatively dense and closely set, sparser on lower posterior margin and area between mesepisternum and mesosternum (Fig. 3). Lancet with 7 distinct serrulae, serrulae 1–3 rounded, serrulae from 4–7 flat and serrate (Fig. 4); apical 5 annuli straight. Sawsheath shorter than basal plate and about two-thirds length of hindtibia.

Male.—Length, 7.5 mm. Antenna with segments 1–5 orange to dark orange, segments 2–4 paler orange than segments 1 and 5; segments 6 to apex black. Head black with following white: mandible (except reddish apex); round spot on each side of clypeus; oval spot posterior to area between each lateral ocellus and eye; broad stripe from lower inner orbit continuing through malar area and extending on gena, but not adjacent to eye, to top of head behind each eye. Thorax black with following white: undersurface of cervical sclerite; posterior lateral margin of pronotum; lower third of pronotum laterally; tegula; oval streak on anterior margin of mesepister-

num; oval spot on posterior margin of mesepisternum at center; elongate spot at junction of mesepisternum and mesosternum. Forecoxa black with white outer surface; midcoxa black with apical half white; hindcoxa mostly black with narrow white apex; rest of legs orange with fore- and midtarsi infuscate to black and apical 4 hindtarsal segments infuscate, darker than orange basitarsus. Abdomen orange with basal plates and anterior third of second tergum black; cercus brownish, darker than orange abdomen; small, faint, lateral yellowish-white spots on tergites 4–6. Wings lightly, uniformly blackish; veins and stigma dark brown to black.

Antenna 16 segmented. Sculpturation similar to that of female. Genitalia similar to that of *X. tibialis* Say (Smith 1976, figs. 28, 29).

Types.—Holotype ♀ labeled "USA: Illinois: Pope Co.: Hwy 145, 10 km S of Dixon Springs, Logs, April 3, 1999, Colls. Nathan M. Schiff & B. Planade," "emerged ex Betula nigra, May 1, 1999." Paratypes, 1 ♀ and 1 ♂ with the same data. All deposited in the National Museum of Natural History, Smithsonian Institution, Washington, DC.

Host and biological notes.—*Betula nigra* L. (Betulaceae), river birch. NMS collected three pieces of fallen, recently dead *Betula nigra* branches, only one of which contained *Xiphydria decem.* The piece that contained the larvae was 127 cm long, but the distal tip was broken when found. The end closest to the tree was 4.3 cm in diameter, and the distal end was 2.8 cm in diameter. There were three emergence holes (1.5, 1.6, and 1.6 mm in diameter) at branch diameters of 3.8, 3.8, and 3.2 cm, respectively. The first two emergence holes were 19.3 mm apart. The third emergence hole was 54 cm from the next nearest hole. The bark of mature *B. nigra* peels off the trunk like sheets of paper. The *X. decem* were in a younger distal shoot where the bark resembles young basswood or cherry. The wood samples with the exit holes are stored in the Jim Solomon Hardwood Borer Damage Collection at the Center for Bottomland Hardwoods, U.S. Forest Service, Stoneville, MS.

Etymology.—The specific epithet, "*decem,*" meaning ten in Latin, refers to the tenth species of *Xiphydria* known in North America.

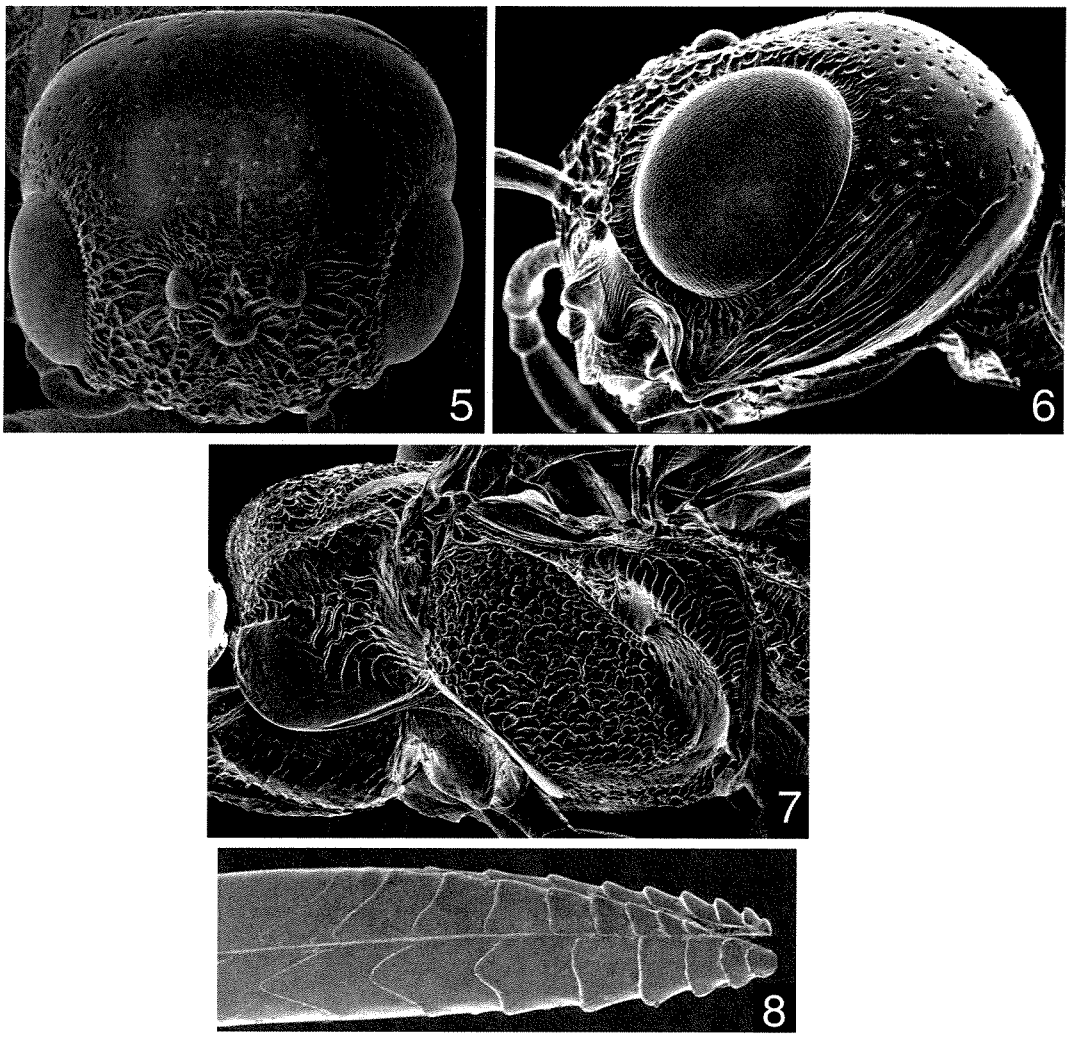
Remarks.—We have compared this new species with Palearctic and other Nearctic *Xiphydria,* but it is distinct from all species known to us.

The host, *Betula nigra* is restricted to stream banks and moist places at low to medium elevations from New Hampshire to northern Florida west through Ohio, Indiana, central Illinois, southern Wisconsin, to southern Minnesota, eastern Kansas eastern Oklahoma, and eastern Texas. Therefore, *X. decem* could be widely distributed in North America.

The female will run to couplet 6, *X. abdominalis* Say and *X. tibialis* Say in Smith's (1976) key. The male will not run past couplet 1 because of its almost entirely orange abdomen and mostly black mesepisternum. In coloration, *X. decem* is most similar to *X. abdominalis* and the red-abdomen form of *X. tibialis,* but structurally it is closest to *X. tibialis.* Coloration can be used to separate *X. decem,* but structure, especially sculpturation, also should be examined.

The female *Xiphydria abdominalis* has a long white streak on the head posterior to the area between the lateral ocellus and the eye, yellowish inner orbits, usually yellowish suprantennal area, usually reddish anterior portion of the pronotum, a white spot on the posteior margin of the pronotum, and pale orange tarsi. The male of *X. abdominalis* usually has the head, mesonotum, and mesepisternum extensively yellow with various sized black spots, and the legs entirely yellowish.

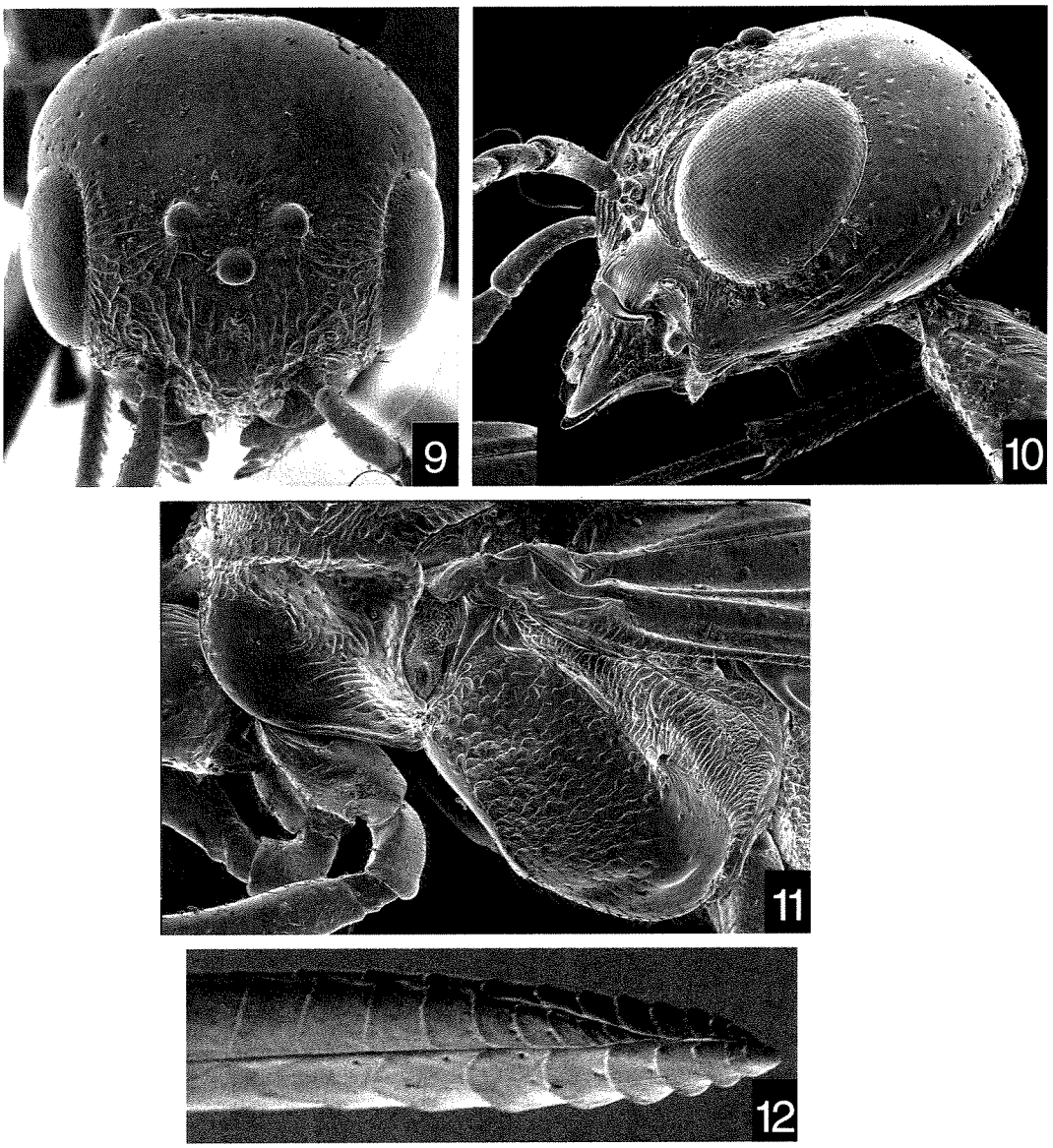
The female of the red-abdomen form of *X. tibialis* has lateral yellow spots on abdominal segments 2–5, the tibiae usually half or more white, the basitarsi and sometimes the second tarsal segments white, and



Figs. 5–8. *Xiphydria tibialis*. 5, Head, dorsoanterior view. 6, Head, lateral view. 7, Thorax, lateral view. 8, Apex of lance and lancet.

uniformly hyaline wings. The paler colored forms of *X. tibialis* males have extensive yellow on the head between the eyes, yellow antennae, and clypeus, yellow spots on the mesonotum, and mostly yellow mesipesternum and coxae.

Both *X. decem* and *X. tibialis* share the protuberant anterior part of the head when viewed in profile (Figs. 2, 6), extensive sculpturation on the head behind and lateral to the ocelli and on the gena (Figs. 1–2, 5–6), closely set sculpturation of the mesepisternum (Figs. 3, 7), similarly shaped serrulae of the lancet (Figs. 4, 8), and similar male genitalia. *Xiphydria abdominalis* has the front part of the head rounded when viewed in profile, none or weak sculpturation on the head behind and lateral to the ocelli and on the genae (Figs. 9–10), weaker sculpturation on the mesepisternum with wider shining interspaces and little or none on the lower mesepisternum and mesoster-



Figs. 9–12. *Xiphydria abdominalis*. 9, Head, dorsoanterior view. 10, Head, lateral view. 11, Thorax, lateral view. 12, Apex of lance and lancet.

num (Fig. 11), more rounded than serrate serrulae of the lancet (Fig. 12), and the valve of the male genitalia straighter and with a broad apical lobe (Smith 1976, fig. 34). As opposed *to X. tibialis, X. decem* has fewer striae and reticulations on the head behind and lateral to the ocelli, has fewer striae on the gena (Figs. 1–2, 5–6), lacks sculpturation on the lower half or more of the pronotum, has weaker sculpturation on the mesepisternum, especially at the junction of the mesepisternum and mesosternum (Figs. 3, 7), and has a sawsheath that is shorter than the basal plate.

The only other species of *Xiphydria* recorded from birch is *Xiphydria mellipes* Harris (Smith 1976). Its hosts are *Betula populifolia* Marsh., *B. papyrifera* Marsh., *B. lenta* L., *B. alleghaniensis* Britt. (= *B. lutea*), and *B. occidentalis* Hook. "Dead Betula nigra" was recorded as a host of *X. tibialis* by Smith (1976), but label data such as this sometimes need confirmation. *Xiphydria abdominalis* is mostly restricted to basswood, *Tilia americana* L., and the most common hosts recorded for *X. tibialis* are *Ulmus* sp. and *Prunus* sp., although NMS reared it from *Acer* sp. A number of other hosts have been recorded for *X. tibialis,* but these await confirmation (Smith 1976).

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